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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------|-------------|----------------------|---------------------|------------------|
| 10/568,815 | 11/30/2006 | Rafael Gatt | 27262U | 7252 |
| 20529 7590 01/21/2009 | | | | |
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| EXAMINER | | | | |
| BRYANT, MICHAEL C | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2884 | | | | |
| MAIL DATE | | DELIVERY MODE | | |
| 01/21/2009 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/568,815

Applicant(s)

GATT, REFAEL

Examiner

CASEY BRYANT

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-62 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 21 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 11/13/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The IDS filed 11/13/2006 has been received and has been considered.

Drawings

2. The drawings are objected to because they contain multiple figures which are hand drawn and contain numbers and/or labels which are illegible. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claims Analysis

3. Apparatus claims cover what a device is, not what a device does. An invention need not operate differently than the prior art to be patentable, but need only *be* (unobviously) different. Therefore, phrases following an element beginning “...**for doing task y...**” have not been given patentable weight. To be given patentable weight in an apparatus claim, a functional limitation must be described in terms of the structure of the device. For example, an apparatus whose functional characteristics are limiting can be “configured to” or “adapted to” perform a specific function. See e.g. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1390-91, 7 USPQ2d 1222, 1224-25 (Fed. Cir.), cert. Denied, -- U.S. --, 109 S. Ct. 395 (1988); *Panduit Corp. v. Dennison Mfg. Co.*, 774 F. 2d 1082, 1098, 227 USPQ 337, 348 (Fed. Cir. 1985), vacated, 475 U.S. 809 [229 USPQ 478] (1986), on remand, 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir.), cert. Denied, 481 U.S. 1052 (1987). *Hewlett-Packard Co. v. Bausch & Lomb, Inc.*, 15 USPQ2d 1525 (Fed. Cir. 1990).

Claim Rejections - 35 USC § 112 and 35 USC § 101

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-18 and 48-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 17-18 and 48-49 provides for the industrial and medical use of the method of claims 1 and 34, but since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 17-18 and 48-49 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 8, 15-21, 24-26, 34, 39 48-50, 54 and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by **Nelson et al.** (US 6,216,540 B1).

With respect to claims 1 and 34, Nelson discloses a method of detecting a concealed object (abstract) comprising: transiently changing a temperature of at least a part of the a body at which the object is concealed (col. 6, lines 7-21); acquiring at least

one IR image of at least a first part of a surface of the body; and seeking the concealed object in the at least one IR image (thermal imager)(col. 26, lines 33-60).

With respect to claims 19-21, Nelson discloses a system comprising: a mechanism (means for heating/cooling); and a first camera (thermal imager)(col. 6, lines 7-21; col. 26, lines 33-60).

With respect to claim 50, Nelson discloses a system comprising: a first camera (thermal imager), a memory (database), and a processor (means for accessing database) (col. 26, lines 44-60).

With respect to claims 8 and 39, Nelson discloses acquiring at least one IR image of at least a second part of a surface of said body, from a different point of view than said at least one infrared image of said at least first part of said surface of said body, said concealed object then being sought both in said at least one infrared image of said at least first part of said surface of said body and in said at least one infrared image of said at least second part of said body (col. 27, line 65 – col. 28, line 7).

With respect to claims 15 and 16, Nelson discloses the transient change in temperature as an increase or decrease (col. 26, lines 33-40).

With respect to claim 17-18 and 48-49, Nelson discloses the industrial and medical use of the methods of claims 1 and 34 (abstract; col. 26, lines 33-60).

With respect to claims 24 and 54, Nelson discloses a second camera (col. 26-line 61 – col. 27, line 2).

With respect to claim 25 and 55, Nelson discloses the first camera as operative to acquire a plurality of infrared images (col. 26, lines 51-53).

With respect to claim 26, Nelson discloses a memory and processor (means for accessing database)(col. 26, lines 48-60).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2, 3, 6, 9, 11-13, 28-32, 35, 36, 40, 42, 44-46, 51 and 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson et al.** (US 6,216,540 B1).

With respect to claims 2 and 35, Nelson discloses the body as a person and wherein the object is concealed in the person (col. 1, lines 17-28), but does not specifically disclose the object concealed under a garment worn by the person. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to detect a concealed object, such as a weapon, located under a garment on a person since a person being inspected for a concealing a weapon (e.g. airport) would likely be dressed at the time of inspection, and are likely to conceal the weapon under their clothing.

With respect to claims 3 and 36, Nelson further disclose disturbing/modifying the imaging environment to redistribute the object and/or obscuring medium, and further suggests bringing the object closer to the surface. As explained above regarding locating a concealed object under the garments of a person, and in further view of col. 27, line 65 – col. 28 line 23, it would have been obvious to one of ordinary skill to press

the garment against the object. One would have been motivated to do so in order to modify the imaging environment and induce a change in imaging area allowing it to be more easily identified.

With respect to claims 6, 9, 40, 42, 51 and 56, Nelson discloses wherein a plurality of IR images and reference images are acquired, the method further comprising processing the IR images to obtain information on how the body heats or cools as a function of time, the concealed object then being sought according to the information. Nelson does not specify measuring the thermal diffusivity of the body. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to measure the thermal diffusivity of an object, since it was known in the art that thermal diffusivity describes the rate at which heat is conducted through a medium, and thus how rapidly the object adjusts its temperature to its surroundings over time. One would have been motivated to measure the thermal diffusivity, since it is unique for different mediums, allowing one to determine of what medium an object is composed.

With respect to claims 11, 12, 44 and 45, Nelson discloses reference images acquired in a visible or NIR waveband (col. 7, line 59 – col. 8, line 26; col. 26, line 61 – col. 27., line 64; col. 1, lines 55-63).

With respect to claims 13 and 46, Nelson discloses acquiring IR and reference images, but does not specify acquiring the images simultaneously. However, it would have been obvious to one of ordinary skill in the art to acquire both images simultaneously in order to perform real-time imaging analysis.

With respect to claim 28 and 57, Nelson discloses a second camera (claims 1 & 12).

With respect to claim 29 and 58, Nelson discloses the second camera operative to acquire reference images in a visible waveband (col. 7, line 59 – col. 8, line 26; col. 26, line 61 – col. 27., line 64; col. 1, lines 55-63).

With respect to claim 30 and 59, Nelson discloses the cameras having a common field of view (col. 7, line 59 – col. 8, line 26).

With respect to claim 31 and 60, Nelson discloses wherein said first camera is operative to acquire a corresponding plurality of reference images of said at least first part of said surface of said body (col. 7, line 59 – col. 8, line 26; col. 19, line 54 – col. 20, line 24), said processor being operative to process both said infrared images and said reference images to identify the concealed object (col. 26, lines 32-60). Nelson discloses providing a memory, as well as collecting reference images, but does not specifically disclose storing the reference images with the memory. However, it would have been obvious to one of ordinary skill in the art to store the reference images in a memory, as suggested by Nelson, in order to access the images at a later time for data processing (e.g. extracting a concealed object from the images).

With respect to claim 32 and 61, Nelson discloses the reference images as thermal images (thermal: 0.9-14 microns)(col. 26, lines 32-60).

11. Claims 4, 5, 7, 10, 22, 23, 27, 37, 38, 41, 43, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson et al.** (US 6,216,540 B1) in view of **Li et al.**¹

With respect to claims 4, 22, 37 and 52, Nelson discloses thermal imaging but does not specify the waveband as between 3-5 microns. Li discloses a system and method for thermal imaging comprising performing thermal imaging using a camera sensitive in the 3-5 micron waveband (Sec. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify imaging in the 3-5 micron waveband, as taught by Li, in order to obtain a thermal image having superior resolution.

With respect to claims 5, 23, 38 and 53, Nelson discloses thermal imaging but does not specify the waveband as between 8-12 microns. Li discloses a system and method for thermal imaging comprising performing thermal imaging using a camera sensitive in the 8-12 micron waveband (Sec. 1, 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify imaging in the 8-12 micron waveband, as taught by Li, in order to provide a rugged and portable camera of reduced cost, while reducing solar interference (Sec. 1).

With respect to claims 7, 10, 27, 41 and 43, Nelson discloses an image storage database and processing means, but does not specify the type of processing means. However, Li discloses digitally storing collected images and retrieving them for further image processing. It would have been obvious to one of ordinary skill in the art at the

¹ Li, P., A. Maad, F. Moshary, M. F. Arend, and S. Ahmed. "Infrared Imaging of Buried Objects by

time the invention was made to specify a digital processing means, as taught by Li, in order to more efficiently process image data.

12. Claims 14, 33, 47 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nelson et al.** (US 6,216,540 B1) in view of **Bottesch** (US 5,747, 719).

With respect to claims 14, 33, 47 and 62, Nelson discloses a system and method for identifying a concealed object in an IR image, but does not disclose a means for immobilizing the body if the concealed object is identified. Bottesch discloses a system and method for thermographically identifying a person having weapon and whether the weapon is concealed (col. 1, lines 24-40), further comprising a means for immobilizing the person if a weapon is identified (col. 1, line 42 – col. 2, line 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to immobilize the body (i.e. a person) upon detecting a concealed object (i.e. a weapon), as taught by Nelson, in order to prevent the person's escape (col. 2, lines 23-40).

References Cited

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Davies (US 6,375,697) discloses a device and method for detecting a concealed object, but does not disclose changing a temperature of a body or acquiring an infrared image to seek the concealed object.

Nilsson et al. (US 2002/0050566 A1) discloses an non-destructive thermographic arrangement for inspecting a layer.

Bannister et al. (US 6,406,918 B1) discloses a method of thermal analysis for detecting and identifying explosives.

Sun et al. (US 2002/0110176 A1) discloses a device and method for non-destructive thermal evaluation of a sample for locating defects.

Shepard (US 6,751,342 B2) discloses a device and method for non-destructive thermal evaluation for evaluating subsurface defects.

Del Grande (US 2004/0183020 A1) discloses a method of thermal imaging for detecting subsurface objects.

Keller (US 6,876,322 B2) discloses a device for concealed object detection using terahertz spectroscopy.

Willms et al. (US 7,151,447 B1) discloses a method of identifying "threats" within cargo shipments using a plurality of energy detection means including thermal, UV, vibrational, x-ray and RF sources and/or detectors.

Gorian et al. (US 2007/0122038 A1) discloses a system and method for detecting concealed objects using thermal imaging.

Gulati (US 7,239,974 B2) discloses a device for explosives detection via monitoring thermal emissivity.

Lyubchik et al. (US 2008/0185525 A1) discloses a device and method for thermally detecting hidden objects on a person.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CASEY BRYANT whose telephone number is (571)270-1282. The examiner can normally be reached on Monday - Friday, 8am - 5pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571)272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Casey Bryant
Examiner
/David P. Porta/

Application/Control Number: 10/568,815

Page 13

Art Unit: 2884

Supervisory Patent Examiner, Art Unit 2884